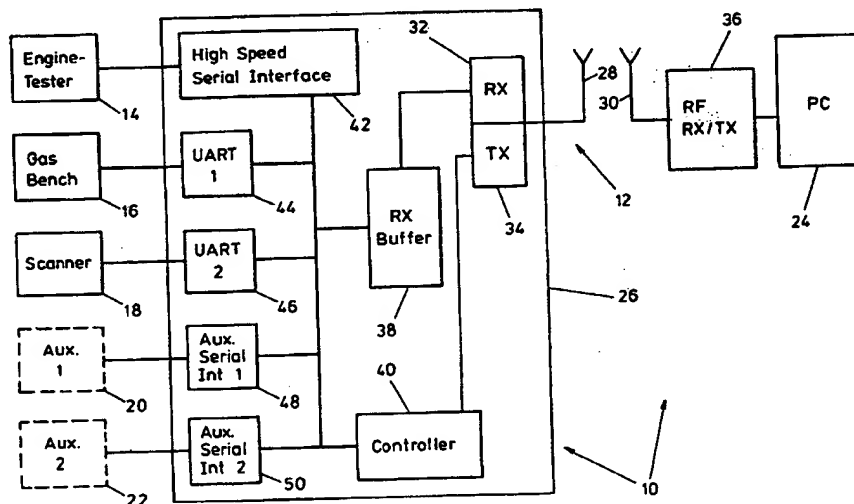




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : <b>G08C 15/02, 17/02</b>		A3	(11) International Publication Number: <b>WO 98/44471</b>
			(43) International Publication Date: 8 October 1998 (08.10.98)
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(22) International Filing Date: 3 April 1998 (03.04.98)			
(30) Priority Data: 9706797.9      3 April 1997 (03.04.97)      GB		<b>Published</b> <i>With international search report.          Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>	
(71) Applicant (for all designated States except US): SUN ELECTRIC UK LIMITED [GB/GB]; Unit 12, Horsleys Fields, King's Lynn, Norfolk PE30 5DD (GB).		(88) Date of publication of the international search report: 7 January 1999 (07.01.99)	
(72) Inventors; and (75) Inventors/Applicants (for US only): JONES, Barbara, Lynn [GB/GB]; Sun Electric UK Limited, Unit 12, Horsleys Fields, King's Lynn, Norfolk PE30 5DD (GB). SMITH, Paul [GB/GB]; Sun Electric Limited, Unit 12, Horsleys Fields, King's Lynn, Norfolk, PE30 5DD (GB).			
(74) Agent: ARCHER, Philip, Bruce; Urquhart-Dykes & Lord, New Priestgate House, 57 Priestgate, Peterborough, Cambs PE1 1JX (GB).			

(54) Title: WIRELESS MULTIPLEX DATA TRANSMISSION SYSTEM



## (57) Abstract

A method and apparatus for wireless transmission of data through a communications channel between at least two local data sensors (for example automotive diagnostic data sensors or NVH sensors), which may include a primary data-processing function, and data-processing function (for example a PC) to receive data therefrom. The system provides for asymmetrical division of the communications channel on a frequency or time-division or packet-switching basis so that the corresponding asymmetrical data transmission requirement of the local data sensors are matched to the capacity of their respective sub-channels whereby a single channel is capable of transmitting all the required data. A particularly practical application is to noise vibration harshness analysis of wireless-transmitted data from three-dimensionally spaced NVH sensors enabling spacial pinpointing of vibration sources in automotive warranty analysis studies.

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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 98/00866

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 6 G08C15/02 G08C17/02

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 G08C G01R H04J G01H A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	US 4 738 133 A (BRECKEL ET AL) 19 April 1988 see abstract  see column 1, line 63 - column 2, line 31; figures 1,2	1-3,7, 13-15 4-6,8, 16-19
Y A	GB 2 295 070 A (ALPS ELECTRIC CO. LTD.) 15 May 1996 cited in the application see abstract	1-3,7, 13-15  4-6,8, 16-19
A	US 5 509 013 A (ADACHI ET AL) 16 April 1996 cited in the application see abstract see column 1, line 19 - line 64; figure 1  -/-	5,17

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Date of the actual completion of the international search

29 October 1998

Date of mailing of the international search report

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Name and mailing address of the ISA

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# INTERNATIONAL SEARCH REPORT

International Application No

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 41 31 341 A (MERCEDES-BENZ AKTIENGESELLSCHAFT) 26 November 1992 see abstract see column 1, line 53 - line 64; figures 1,2 ---	2,14
A	DE 41 06 572 A (FRAUNHOFER-GESELLSCHAFT) 3 September 1992 see abstract see column 2, line 20 - line 29; figure 2 ---	24,25
A	EP 0 685 390 A (MITSUBISHI) 6 December 1995 see abstract see column 2, line 36 - column 3, line 2; figure 6 ---	24,25
A,P	US 5 622 170 A (SCHULTZ) 22 April 1997 cited in the application see abstract see column 4, line 25 - line 49; figure 1A -----	24,25

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB 98/00866

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

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3. ☐ Claims Nos.:  
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see additional sheet

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This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-23

Multiplex data transmission via a wireless with different rates in each channel

2. Claims: 24,25

Vibration analysis using a sensor

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 98/00866

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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DE 4106572	A	03-09-1992	NONE	
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# INTERNATIONAL SEARCH REPORT

Int. J. Application No

PCT/GB 98/00866

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 6 G08C15/02 G08C17/02

28 Rec'd PCT/PTO 01 OCT 1999

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Minimum documentation searched (classification system followed by classification symbols)

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Authorized officer

O'Reilly, D

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 98/00866

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International application No.  
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because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

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see additional sheet

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**2. Claims: 24,25**

Vibration analysis using a sensor

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